AMENDMENTS TO THE CLAIMS

1-75 (Canceled)

76. (New) A power generation system, comprising:

a compressor for compressing a medium comprising taken-in air and supplied fuel;

a combustor for burning the medium compressed by said compressor;

a turbine that is rotated by receiving the medium burned by said combustor;

an electric rotary machine mechanically connected to said turbine, said electric rotary machine including:

a stator having a primary winding and a stator magnetic pole;

a rotor having a field magnet facing said stator magnetic pole and a shaft; and

a displacement mechanism provided on said rotor;

a power converter electrically connected to said electric rotary machine; and

a controller for controlling said power converter;

wherein said field magnet comprises:

a first field magnet with magnetic poles of sequentially different polarities arranged in a rotational direction; and

a second field magnet rotatable with respect to said first field magnet, and having magnetic poles of sequentially different polarities arranged in a backward rotational direction;

wherein said displacement mechanism displaces said second field magnet in an axial direction and in a rotational direction with respect to said first field magnet in accordance with a balance between a magnetic acting force between said first field magnet and said second field magnet, and a direction of torque generated in said rotor;

wherein when said turbine is started, and said electric rotary machine is operated as an electric motor to elevate the speed of said turbine from zero to the self-sustaining speed of said turbine, the same magnetic pole centers of said first field magnet and said second field magnet are located in a line in accordance with the balance between the magnetic acting force between said first field magnet and said second field magnet, and the direction of rotating torque generated in said rotor; and

wherein when said turbine operates at a speed in excess of the self-sustaining speed, and said electric rotary machine is operated as a generator to generate power, the direction of rotating torque generated in said rotor is reversed to thereby allow the same magnetic torque center positions of said first field magnet and said second field magnet to deviate from each other.

77. (New) The power generation system of claim 76, wherein said first field magnet is secured to said shaft, said second field magnet is provided movably relative to said shaft, and said second field magnet and said shaft are connected to each other by a thread function comprising a relation between a bolt function provided for said shaft and a nut function provided for said second field magnet.

78. (New) The power generation system of claim 77, wherein a stopper for preventing said second field magnet from being displaced in excess of a fixed level is provided on a side of said second field magnet, and said stopper is movable in parallel with said shaft.

79. (New) The power generation system of claim 78, wherein said stopper is moved by a servo mechanism in parallel with said shaft in accordance with the rotational speed.

80. (New) The power generation system of claim 76, wherein said controller controls a displacement angle of a current supply according to the deviation of a composite magnetic pole position of said first field magnet and said second field magnet.

81. (New) The power generation system of claim 76, wherein said controller controls a displacement angle of a current supply according to the deviation angle of a composite magnetic pole position of said first field magnet and said second field magnet.

82. (New) The power generation system of claim 77, wherein a plurality of support mechanisms for guiding rotating motion, reciprocating motion and composite motion are provided between said second field magnet and said shaft.

83. (New) The power generation system of claim 77, wherein a sleeve for electrically and magnetically insulating said second field magnet from said shaft is provided

therebetween, and said sleeve is secured on the inner circumferential side of said second field magnet.

84. (New) The power generation system of claim 83, wherein said sleeve is a non-magnetic material, which is higher in electrical resistivity than iron.

85. (New) The power generation system of claim 77, wherein springs for guiding rotating motion, reciprocating motion and composite motion of said second field magnet are provided before and behind said second field magnet, respectively.

86. (New) The power generation system of claim 77, wherein said first field magnet is provided with a recess on a side thereof in contact with said second field magnet,

the second field magnet is provided with a projection on a side thereof in contact with said first field magnet, and

said projection also serves as a sleeve for insulating said second field magnet from said shaft electrically and magnetically.

87. (New) The power generation system of claim 78, wherein said stopper is provided with a support mechanism for guiding rotating motion, reciprocating motion and composite motion with respect to said second field magnet and said shaft.

88. (New) The power generation system of claim 77, wherein an air gap between a rotor of said second field magnet and said stator is larger than an air gap between a rotor having said first field magnet and said stator.

89. (New) The power generation system of claim 79, wherein said stopper and said servo mechanism are provided on the inner circumferential side of said second field magnet.